4.2.5.3 Air Quality and Noise

Construction and operation activities associated with the No Action Alternative and the proposed storage alternatives would generate criteria and toxic/hazardous pollutants. To evaluate the air quality impacts at ORR, criteria and toxic/hazardous concentrations from the No Action Alternative and the proposed storage alternatives are compared with Federal and State standards and guidelines. Impacts from radiological airborne emissions are described in Section 4.2.5.9.

In general, all of the proposed storage facilities would emit the same types of air pollutants during construction. It is expected emissions would not exceed Federal, State, or local air quality regulations. PM_{10} and TSP concentrations will be increased, especially during peak construction periods.

The principal sources of emissions during construction include the following:

- Fugitive dust from land clearing, site preparation, excavation, and wind erosion of exposed ground surfaces
- Exhaust and road dust generated by construction equipment, vehicles delivering construction materials, and vehicles carrying construction workers

During operation, concentrations of criteria and toxic/hazardous air pollutants emitted by the individual storage facilities are predicted to be in compliance with Federal, State, and local air quality regulations or guidelines. Table 4.2.5.3–1 presents the estimated pollutant concentrations for each of the storage alternatives, indicating little difference between alternatives with respect to impacts to air quality.

Emission rates attributed to operation of the proposed storage facilities are presented in Tables F.1.3–1 and F.1.3–3. [Text deleted.] Air pollutant emission sources associated with operations include the following:

- Operation of existing boilers for space heating
- Operation of diesel generators and periodic testing of emergency diesel generators
- Exhaust and road dust generated by vehicles delivering supplies and bringing employees to work
- Toxic/hazardous pollutant emissions from facility processes

Noise impacts during either construction or operation are expected to be low. Air quality and noise impacts for each storage alternative are described separately. Supporting data for the air quality and noise analyses are presented in Appendix F.

AIR QUALITY

An analysis was conducted of the potential air quality impacts of emissions from each of the storage alternatives as described in Section 4.1.3. Section 176 (c) of the 1990 CAA Amendments requires that all Federal actions conform with the applicable SIP. The EPA has implemented rules that establish the criteria and procedures governing the determination of conformity for all Federal actions in nonattainment and maintenance areas. These are discussed in Section 4.1.3. The attainment status of the area in which ORR is located is discussed in Section 3.6.3. Since the area is considered an attainment area for criteria pollutants, the proposed actions at this site do not require that a conformity analysis be performed.

No Action Alternative

This alternative utilizes estimated air emissions data from operations at ORR assuming continuation of site missions as described in Section 3.6. These data reflect conservative estimates of criteria and toxic/hazardous emissions at ORR. The emission rates for the criteria and toxic/hazardous pollutants for No Action for the total site are presented in Table F.1.2.6–1. Table 4.2.5.3–1 presents the No Action concentrations. During dry and windy conditions increased PM_{10} and TSP concentrations may occur due to ongoing construction associated with other activities (that are outside the scope of this PEIS) under the No Action Alternative. Concentrations of all other criteria and toxic/hazardous air pollutants at the site boundary or public-access highways are expected to remain within applicable Federal, State, and local ambient air quality standards.

Upgrade Alternative

Preferred Alternative: Modify Existing Y–12 Plant for Continued Highly Enriched Uranium Storage

It is expected that concentrations of pollutants at the site boundary or public access highways would remain within applicable Federal and State ambient air quality standards during upgrade of facilities for continued HEU storage.

During operation, concentrations of criteria and toxic/hazardous air pollutants are predicted to be in compliance with Federal, State, and local air quality regulations or guidelines. Estimated pollutant concentrations attributable to increased operations associated with this storage alternative, plus the No Action concentrations, are presented in Table 4.2.5.3–1.

Collocation Alternative

Construct New Plutonium Storage Facility; Maintain Existing Highly Enriched Uranium Storage Facilities at Y–12 Plant

In addition to the types of sources of emissions during construction associated with the No Action and the Upgrade Alternative, fugitive dust resulting from the operation of a concrete batch plant would be an additional emission source associated with this storage alternative.

Increased PM_{10} and TSP concentrations may occur during the peak construction period, particularly during dry and windy conditions. Appropriate control measures would be followed to minimize pollutant concentrations during construction. Concentrations of all pollutants at the site boundary or public-access highways would remain within applicable Federal and State ambient air quality standards during construction.

During operation, concentrations of criteria and toxic/hazardous air pollutants are predicted to be in compliance with Federal, State, and local air quality regulations or guidelines. Estimated pollutant concentrations attributable to increased operations associated with this storage alternative, plus the No Action concentrations, are presented in Table 4.2.5.3–1.

Construct New Plutonium Storage Facility and Modify Existing Highly Enriched Uranium Storage Facilities at Y–12 Plant

Air quality impacts for construction for this option are expected to be similar to those discussed previously for the new Pu storage facility only option.

During operation, concentrations of criteria and toxic/hazardous air pollutants are predicted to be in compliance with Federal, State, and local air quality regulations or guidelines. Estimated pollutant concentrations attributable to increased operations associated with this storage alternative, plus the No Action concentrations, are presented in Table 4.2.5.3–1.

Construct New Plutonium and Highly Enriched Uranium Storage Facilities

Air quality impacts for construction for this option are expected to be similar to those discussed previously for the new Pu storage facility only option.

During operation, concentrations of criteria and toxic/hazardous air pollutants are predicted to be in compliance with Federal, State, and local air quality regulations or guidelines. Estimated pollutant concentrations attributable to increased operations associated with this storage alternative, plus the No Action concentrations, are presented in Table 4.2.5.3–1.

Subalternative Not Including Strategic Reserve and Weapons Research and Development Materials

Air quality impacts for construction and operation for this subalternative are expected to be similar to those described previously for the No Action Alternative, the Upgrade Alternative, and the Collocation Alternative. [Text deleted.]

Phaseout

Phaseout of existing HEU inventories as a result of consolidating HEU at another site is expected to result in a small reduction in air pollutant concentrations from the No Action concentrations and would be in compliance with Federal and State standards.

NOISE

The location of the storage facilities relative to the site boundary and sensitive receptors was examined to evaluate the potential for onsite and offsite noise impacts.

Noise sources during construction may include heavy construction equipment and increased traffic. Increased traffic would occur onsite and along offsite local and regional transportation routes used to bring construction material and workers to the site.

No Action Alternative

Nontraffic noise sources associated with continued interim storage and other ongoing missions are the same as described in Chapter 3. The continuation of operations at ORR would result in no appreciable change in traffic noise and onsite operational noise sources from current levels. Nontraffic noise sources are located at sufficient distance from offsite areas that the contribution to offsite noise levels would continue to be small. Due to the size of the site, noise emissions from construction equipment and operations activities would not be expected to cause annoyance to the public. Some noise sources may result in impacts, such as disturbance of wildlife.

Upgrade (Preferred Alternative) and Collocation Alternatives

Nontraffic noise sources associated with the storage alternatives would be similar to those for existing facilities as discussed in Chapter 3. Nontraffic, operational noise sources associated with the storage alternatives include existing or additional equipment and machines (cooling systems, vents, motors, and material handling equipment). These noise sources would be located at sufficient distance from offsite areas that the contribution

to offsite noise levels would be small. Due to the size of the site, noise emissions from construction equipment and operations activities would not be expected to cause annoyance to the public. Some noise sources may result in impacts, such as disturbance of wildlife.

Subalternative Not Including Strategic Reserve and Weapons Research and Development Materials

Noise impacts for construction and operations for this option are expected to be almost the same as those previously described for the No Action Alternative, the Upgrade Alternative, and the Collocation Alternative because noise impacts are based on the use of the facility and not the size.

Phaseout

A reduction in noise levels associated with facility operations may result from the phaseout of storage facilities.